

Reference Table: Provided for Reviewers

| RbR_id | req_key | RbR-text | paragraph_id | req_key | L4-text |
|------------|---------|--|--------------|---------|---|
| PGS-0310#A | 7393 | The PGS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management. | S-DPS-20180 | 4369 | The PRONG CI shall provide an interface to support the modification of the configuration of the Data Processing subsystem Hardware resources. |
| | | | S-DPS-21210 | 4430 | The PRONG CI shall monitor the use of disk space by a PGE during execution. |
| | | | S-DPS-60160 | 4683 | The SPRHW CI shall support collection and maintenance for Fault Management, configuration, performance, accountability, and security of Processing CI hardware resources. |
| | | | S-DPS-20190 | 10047 | The PRONG CI shall have the capability to modify the configuration settings of the Data Processing subsystem Hardware resources. |
| | | | S-PLS-01430 | 10090 | The PLANG CI shall report PLANG performance events to the MSS. |
| | | | S-PLS-01470 | 10091 | The PLANG CI shall report PLANG Accountability events to the MSS. |
| | | | S-PLS-01500 | 10092 | The PLANG CI shall report scheduling events to the MSS. |
| | | | S-DPS-20120 | 10093 | The PRONG CI shall report PRONG error/fault events to MSS. |
| | | | S-PLS-01410 | 10171 | The PLANG CI shall report PLANG error/fault events to MSS. |
| | | | S-DPS-20100 | 10851 | The PRONG CI shall request information about the health and availability of a Hardware Resource by using a Systems Management Subsystem (MSS) provided Resource Management API (Application Program Interface). |
| | | | S-DPS-20140 | 10854 | The PRONG CI shall report PRONG performance events to the MSS. |
| | | | S-DPS-20210 | 10857 | The PRONG CI shall have the capability to determine the Operational state of a Hardware or Software component. |
| | | | C-MSS-10200 | 11588 | The MSS shall interface with the SDPS subsystems to exchange the data items in Table 5.1-2 as specified in the current version of CSMS Requirement Spec for ECS, 304-CD-003. |

| RbR_id | req_key | RbR-text | paragraph_id | req_key | L4-text |
|------------|---------|--|--------------|---------|---|
| PGS-0310#B | 7400 | The PGS element shall collect the management data used to support the following system management functions: a. Fault Management b. Configuration Management c. Accounting Management d. Accountability Management e. Performance Management f. Security Management g. Scheduling Management. | S-DPS-20180 | 4369 | The PRONG CI shall provide an interface to support the modification of the configuration of the Data Processing subsystem Hardware resources. |
| | | | S-DPS-21210 | 4430 | The PRONG CI shall monitor the use of disk space by a PGE during execution. |
| | | | S-DPS-42370 | 4646 | The operations staff shall collect during I&T the performance and resource utilization information needed for entry into or update of the PGE data base. |
| | | | S-DPS-60160 | 4683 | The SPRHW CI shall support collection and maintenance for Fault Management, configuration, performance, accountability, and security of Processing CI hardware resources. |
| | | | S-DPS-42365 | 8699 | The operations staff shall have the capability to use MSS profiling capabilities to determine the computing resources utilized by the execution of a chain of PGEs. |
| | | | S-PLS-01460 | 9071 | The PLANG CI shall collect Accounting Management Data and provide it to the MSS. |
| | | | S-DPS-20190 | 10047 | The PRONG CI shall have the capability to modify the configuration settings of the Data Processing subsystem Hardware resources. |
| | | | S-PLS-01430 | 10090 | The PLANG CI shall report PLANG performance events to the MSS. |
| | | | S-PLS-01470 | 10091 | The PLANG CI shall report PLANG Accountability events to the MSS. |
| | | | S-PLS-01500 | 10092 | The PLANG CI shall report scheduling events to the MSS. |
| | | | S-DPS-20120 | 10093 | The PRONG CI shall report PRONG error/fault events to MSS. |
| | | | S-PLS-01410 | 10171 | The PLANG CI shall report PLANG error/fault events to MSS. |
| | | | S-DPS-20100 | 10851 | The PRONG CI shall request information about the health and availability of a Hardware Resource by using a Systems Management Subsystem (MSS) provided Resource Management API (Application Program Interface). |

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| | | | S-DPS-20140 | 10854 | The PRONG CI shall report PRONG performance events to the MSS. |
| | | | S-DPS-20210 | 10857 | The PRONG CI shall have the capability to determine the Operational state of a Hardware or Software component. |
| PGS-0340#A | 7398 | The PGS shall utilize fault isolation tools provided by the LSM for the PGS and its subsystems. | S-DPS-20460 | 4383 | The PRONG CI shall take a pre-determined error recovery action if the resource which maintains the input data is not available for data staging. |
| | | | S-DPS-20470 | 4384 | The PRONG CI shall take a pre-determined error recovery action if the resource identified as the recipient of the Output Data is not available for data destaging. |
| | | | S-DPS-21220 | 4431 | The PRONG CI shall take a predetermined error recovery action if the maximum disk space requirements defined for that PGE has been exceeded by an adaptable percentage value. |
| | | | S-DPS-20120 | 10093 | The PRONG CI shall report PRONG error/fault events to MSS. |
| | | | S-PLS-00490 | 10105 | The PLANG CI shall log Planning subsystem faults to MSS. |
| | | | S-PLS-01410 | 10171 | The PLANG CI shall report PLANG error/fault events to MSS. |
| | | | S-PLS-00470 | 10831 | The PLANG CI shall maintain information on the following: a. processing status of Production Requests received, b. processing status of Data Processing Requests generated. |
| | | | S-DPS-20100 | 10851 | The PRONG CI shall request information about the health and availability of a Hardware Resource by using a Systems Management Subsystem (MSS) provided Resource Management API (Application Program Interface). |
| | | | S-DPS-20210 | 10857 | The PRONG CI shall have the capability to determine the Operational state of a Hardware or Software component. |
| | | | S-DPS-21230 | 11611 | The PRONG CI shall take a predetermined error recovery action if the maximum wallclock time requirements defined for that PGE execution has been exceeded by an adaptable percentage value. |
| PGS-0340#B | 7402 | The PGS shall utilize fault isolation tools provided by the LSM for the PGS and its subsystems. | S-DPS-20460 | 4383 | The PRONG CI shall take a pre-determined error recovery action if the resource which maintains the input data is not available for data staging. |
| | | | S-DPS-20470 | 4384 | The PRONG CI shall take a pre-determined error recovery action if the resource identified as the recipient of the Output Data is not available for data destaging. |
| | | | S-DPS-21220 | 4431 | The PRONG CI shall take a predetermined error recovery action if the maximum disk space requirements defined for that PGE has |

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|------------|---------|--|--------------|---------|---|
| | | | | | been exceeded by an adaptable percentage value. |
| | | | S-DPS-20120 | 10093 | The PRONG CI shall report PRONG error/fault events to MSS. |
| | | | S-PLS-00490 | 10105 | The PLANG CI shall log Planning subsystem faults to MSS. |
| | | | S-PLS-01410 | 10171 | The PLANG CI shall report PLANG error/fault events to MSS. |
| | | | S-PLS-00470 | 10831 | The PLANG CI shall maintain information on the following: a. processing status of Production Requests received, b. processing status of Data Processing Requests generated. |
| | | | S-DPS-20100 | 10851 | The PRONG CI shall request information about the health and availability of a Hardware Resource by using a Systems Management Subsystem (MSS) provided Resource Management API (Application Program Interface). |
| | | | S-DPS-20210 | 10857 | The PRONG CI shall have the capability to determine the Operational state of a Hardware or Software component. |
| | | | S-DPS-21230 | 11611 | The PRONG CI shall take a predetermined error recovery action if the maximum wallclock time requirements defined for that PGE execution has been exceeded by an adaptable percentage value. |
| PGS-0350#B | 7403 | The PGS shall utilize tools provided by the LSM to support fault isolation between the PGS and external interfaces. | S-PLS-00490 | 10105 | The PLANG CI shall log Planning subsystem faults to MSS. |
| | | | S-PLS-01410 | 10171 | The PLANG CI shall report PLANG error/fault events to MSS. |
| PGS-0350#A | 7438 | The PGS shall utilize tools provided by the LSM to support fault isolation between the PGS and external interfaces. | S-PLS-00490 | 10105 | The PLANG CI shall log Planning subsystem faults to MSS. |
| | | | S-PLS-01410 | 10171 | The PLANG CI shall report PLANG error/fault events to MSS. |
| PGS-1300#B | 6195 | Each PGS shall provide a processing capacity four times the size necessary to process all EOS science data for which it is responsible, except for the Data Assimilation Office requirements shown in Appendix C, Table C-5. It shall be possible to effectively utilize the entire reprocessing capacity at each site on computers with similar architectural design (e.g., parallel processors), for a single algorithm or any mix | S-DPS-60230 | 4684 | The SPRHW CI shall provide a phased capacity to support: <ul style="list-style-type: none"> a. for pre-launch AI&T at launch minus 2 years: 0.3 X, where X is defined as the at-launch processing estimate b. for pre-launch AI&T and System I&T at-launch minus 1 year: 1.2 X, where X is defined as the at-launch processing estimate c. for post-launch AIT, standard processing, and reprocessing, starting at launch plus 1 year: 2.2 X, where X is defined as the standard processing estimate for that period d. for post-launch AIT, standard processing, and reprocessing, starting at launch plus 2 years: 4.2 X, where X is defined as the standard processing estimate for that period. |

| RbR_id | req_key | RbR-text | paragraph_id | req_key | L4-text |
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| | | of algorithms normally run at that site. The four times processing capacity accounts for: a. 1 times to allow for normal processing demands b. 2 times to allow for reprocessing demands c. 1 times to allow for algorithm integration and test demands, production of prototype products, ad hoc processing for "dynamic browse" or new search and access techniques developed by science users, and additional loads due to spacecraft overlap. | | | |
| | | | S-DPS-60242 | 8701 | The SPRHW CI processing shall be sized in accordance with processing requirements derived from Appendix E (Section E.2 Table E-2) of the current version of 304-CD-005. |
| | | | S-DPS-60240 | 9208 | The SPRHW CI shall support a total processing requirement as derived from Table E-1 of Appendix E of the current version of 304-CD-002 for Release A and Appendix E of the current version of 304-CD-005 for Release B. |
| PGS-1300#A | 6946 | Each PGS shall provide a processing capacity four times the size necessary to process all EOS science data for which it is responsible, except for the Data Assimilation Office requirements shown in Appendix C, Table C-5a. It shall be possible to effectively utilize the entire reprocessing capacity at each site on computers with similar architectural design (e.g., parallel processors), for a single algorithm or any mix of algorithms normally run at that site. The four times processing capacity accounts for: a. 1 times to allow for normal processing demands b. 2 times to allow for reprocessing demands c. 1 times to allow for algorithm integration | S-DPS-60230 | 4684 | The SPRHW CI shall provide a phased capacity to support: a. for pre-launch AI&T at launch minus 2 years: 0.3 X, where X is defined as the at-launch processing estimate b. for pre-launch AI&T and System I&T at-launch minus 1 year: 1.2 X, where X is defined as the at-launch processing estimate c. for post-launch AIT, standard processing, and reprocessing, starting at launch plus 1 year: 2.2 X, where X is defined as the standard processing estimate for that period d. for post-launch AIT, standard processing, and reprocessing, starting at launch plus 2 years: 4.2 X, where X is defined as the standard processing estimate for that period. |

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| | | and test demands, production of prototype products, ad hoc processing for "dynamic browse" or new search and access techniques developed by science users, and additional loads due to spacecraft overlap. | | | |
| | | | S-DPS-60240 | 9208 | The SPRHW CI shall support a total processing requirement as derived from Table E-1 of Appendix E of the current version of 304-CD-002 for Release A and Appendix E of the current version of 304-CD-005 for Release B. |
| SMC-2110#B | 4667 | The SMC shall have the capability to generate managerial and operational directives affecting, at a minimum, an elements: a. Operational status b. Resource allocation c. Upgrade | C-MSS-91010 | 321 | The MSS Office Automation word processing capability shall facilitate the: a. preparation, revision, and recording of documents, messages, reports, and data b. import, transformation, and editing of documents produced by other word processing packages c. insertion of worksheet and graphic images into documents, messages, and reports d. transfer of document, message, and report information to spreadsheet and graphics applications e. printing of documents, messages, reports, and data |
| | | | C-MSS-42020 | 7707 | The MSS Software Distribution Service shall provide via the CSS Bulletin Board Service access to the toolkit repository/information. |
| SMC-2110#A | 6958 | The SMC shall have the capability to generate managerial and operational directives affecting, at a minimum, an elements: a. Operational status b. Resource allocation c. Upgrade | C-MSS-91010 | 321 | The MSS Office Automation word processing capability shall facilitate the: a. preparation, revision, and recording of documents, messages, reports, and data b. import, transformation, and editing of documents produced by other word processing packages c. insertion of worksheet and graphic images into documents, messages, and reports d. transfer of document, message, and report information to spreadsheet and graphics applications e. printing of documents, messages, reports, and data |

Change Table: This table identifies existing L4 requirements that are NON Facility related in the RTM database version 122096.

| L4- id | req_key | rel | req_type | req_status | verification-status | verification_method | text |
|-------------|---------|-----|----------------------------|------------|---------------------|---------------------|---|
| S-INS-60160 | 11011 | A | <u>performance derived</u> | approved | unverified | demo | Startup and initialization of the ICLHW CI shall be completed within 30 minutes (TBR). |
| S-INS-60170 | 11012 | A | <u>performance derived</u> | approved | unverified | demo | Shutdown of the ICLHW CI shall be completed within 30 minutes (TBR). |
| S-DPS-60090 | 11014 | A | <u>derived performance</u> | approved | unverified | demo | The SPRHW CI shall support startup and initialization to be completed within 30 minutes (TBR). |
| S-DPS-60100 | 11015 | A | <u>performance derived</u> | approved | unverified | demo | The SPRHW CI shall support shutdown to be completed within 30 minutes (TBR). |
| S-DPS-60110 | 11016 | A | <u>functional derived</u> | approved | unverified | demo | The SPRHW CI shall have a fault detection/fault isolation capability of major HWCi component failures without interfering with operations. |
| S-DPS-60480 | 11019 | A | <u>operational derived</u> | agreed | unverified | demo | The SPRHW CI shall have provision for the AIT science processor to be a backup to the production science processor in the event of a failure. |

Link Table: Link from L4 to Release. B RbRs

| RbR-id | L4-id |
|------------|-------------|
| PGS-0350#B | S-DPS-60110 |
| PGS-0340#B | S-DPS-60110 |
| PGS-0320#B | S-DPS-60110 |
| PGS-0310#B | S-DPS-60110 |
| PGS-1300#B | S-DPS-60480 |
| EOSD4020#B | S-DPS-60480 |
| SMC-2110#B | S-INS-60160 |
| SMC-2110#B | S-INS-60170 |
| SMC-2110#B | S-DPS-60090 |
| SMC-2110#B | S-DPS-60100 |

Note to implementors: a_verification_status attributes are missing for the above Rel. B RbRs. “un_verified” must be incorporated as new attribute.